

UNITED STATES GOVERNMENT

# Memorandum

EP 65-277

25X1A TO : The Files: [REDACTED] T. O. 7

DATE: 7 September 1965

25X1A9a FROM : [REDACTED]

SUBJECT: Inspection Report No. 9 - OS-12 with [REDACTED]

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## 1. Project Description:

The OS-12 is a compact, stable, variable frequency oscillator. It has a frequency range of 2 - 30 Mc without any multiplication, spurious output of -65 db, and an accuracy of  $\pm 1000$  cps. The output power (3.0 V peak to peak across 200 ohms) is 5.0 mw and the input power at 12 V ( $\pm 10$  percent) is 360 mw. The approximate size of the OS-12 is 4" x 2" x 1".

## 2. Contractual Information:

- a. Initial Cost: [REDACTED]
- b. Request for Procurement Action: 18 September 1964
- c. Initiation Date: 28 October 1964
- d. Completion Date: 21 June 1965
- e. Deliverable Items: One engineering model - 28 May 1965; Monthly Reports - on/before first of each month; Equipment Instruction Manuals - on/before 21 June 1965; Final Engineering Report - on/before 21 June 1965; one set reproducible drawings, specifications, and additional 5 copies of each - on/before 21 June 1965

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## 3. Date of Meeting: 27 August 1965

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## 5. Persons Attending:

Agency

Non-Agency

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## 6. Contractor's Performance. . . .

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6. Contractor's Performance:

- a. On schedule and expected to remain so: No
- b. Within obligated funds and expected to remain so: No
- c. Satisfactory technical progress: Yes

7. Project Status:

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[REDACTED] is still plagued with a problem of oscillation when inserting the PC board containing 68 - 69 Mc IF and mixer into the case. Also, a problem in obtaining a sufficiently reliable loop lock-up at the lower 10 Mc of the 2 - 30 Mc tuning range. This problem is due to low amplitude signals from the spectrum generator in the first ten megacycles of tuning range to the 68 - 69 IF amplifier and mixer where lock-on is attained. [REDACTED] believe that by replacing a now unused AGC circuit already on this last troublesome PC board with a DC amplifier the problem will be eliminated. [REDACTED] believes that he has solved the oscillation problem but this must await the PC board's return to the case.

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[REDACTED] indicated that as of the 15th of August [REDACTED] has over expended the contract by \$9,636 and estimates 4 - 5 additional man weeks (at \$500/man week) of labor to finish the project. This includes time for replacing the faulty Amelco flat-packs. [REDACTED] has not, however, contacted OL as to a possible overrun.

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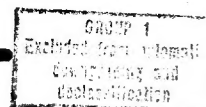
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There are two other areas where the OS-12 is not meeting its original expectations. The first is power consumption. The design goal was for a 300 to 400 mw input power. However, [REDACTED] found that due to transients in the RT-49 power supply system (when keyed) a power-hungry voltage regulator would be needed. [REDACTED] measured the power consumption in my presence. The OS-12 was drawing 800 mw from the power supply. The second area of disappointment is that the

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goal of a. . .



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[REDACTED]

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goal of a \$400 - \$500 production cost does not look very imminent. [REDACTED] believes that as the OS-12 now stands production would be around \$900 to \$1000 per unit in small quantities. A large contributor to this cost would be the temperature compensation of the 152 - 180 Mc voltage controlled oscillator. The compensation tolerances are greater than [REDACTED] had originally thought necessary. [REDACTED] believes there is a way around this probably in the form of using three VCO's each tunable over a 10 Mc portion of the 150 - 180 Mc band. With the above and other considerations, I believe a lower production cost is certainly possible.

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(7 September 1965)